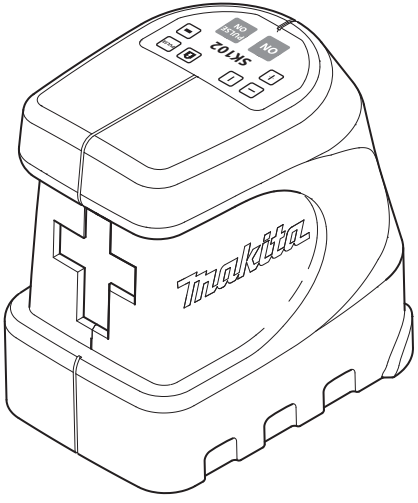
INSTRUCTION MANUAL

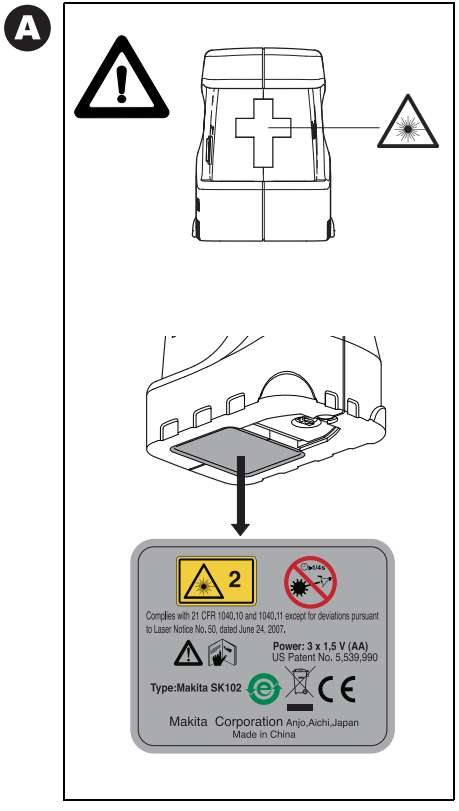
Self leveling alignment tool

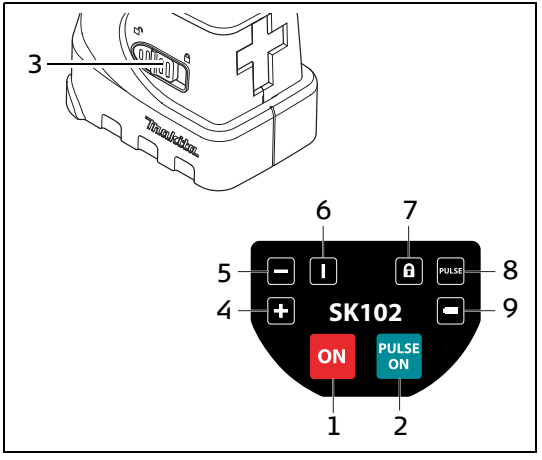
SK102

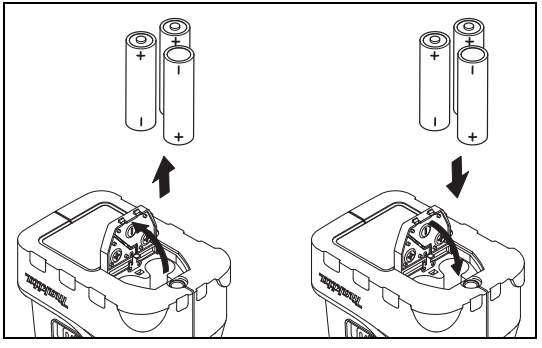


⚠WARNING:
For your personal safety, READ and UNDERSTAND before using.
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

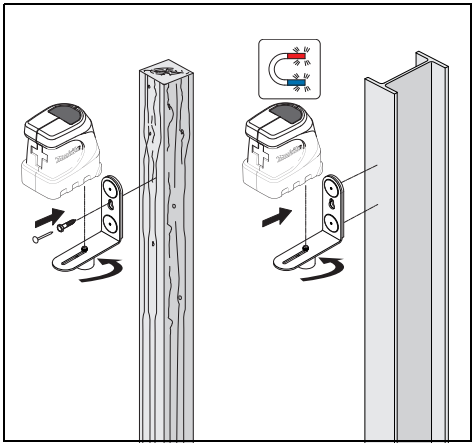
Makita Corporation Anjo, Aichi, Japan
www.makita.com


A
2
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
Power: 3 x 1,5 V (AA)
US Patent No. 5,539,990
Type:Makita SK102
Makita Corporation Anjo,Aichi,Japan
Made in China


B
3
6
7
5
8
4
9
SK102
PULSE
ON
PULSE ON
1
2


C

D



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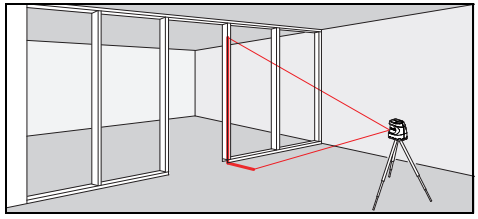

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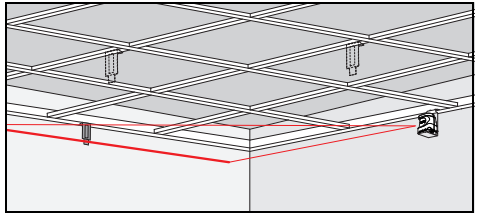

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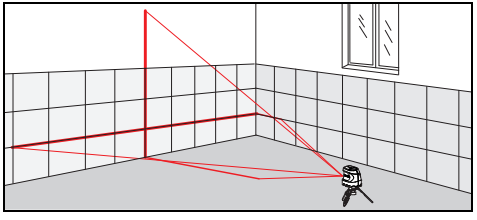

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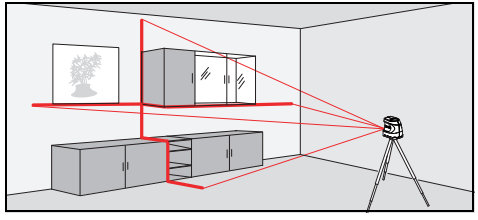

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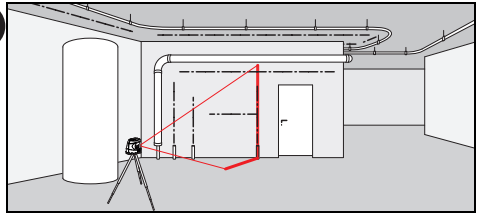

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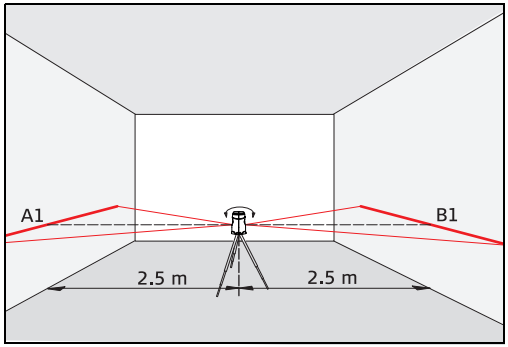

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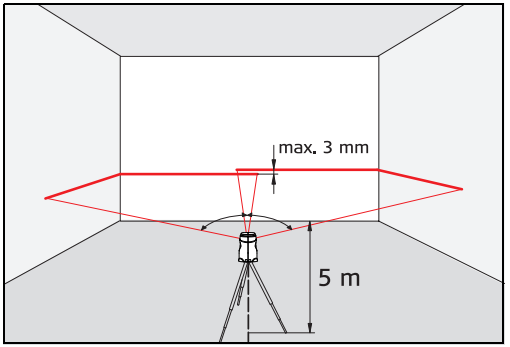

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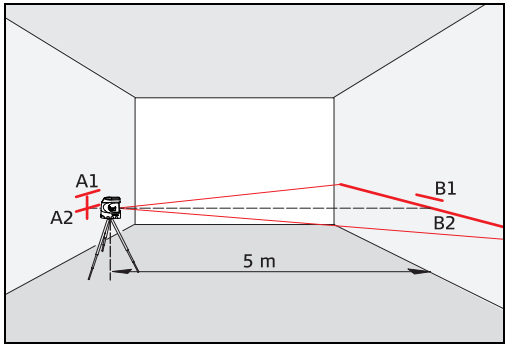

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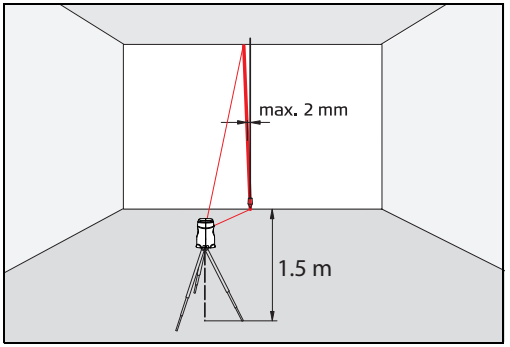

User Manual

English

Congratulations on your purchase of the Makita SK102.

The safety instructions follow the section on how to operate the instrument. Before starting up the instrument for the first time, please read through the entire User Manual paying special attention to the section Safety Instructions .

Notice: There are drawings on the first and last page of the User Manual. Unfold these pages while reading through the User Manual. The letters and numbers in **{}** always refer to these drawings.

Contents

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Start up

EN

Inserting / replacing batteries

Refer to drawing {**C**} - slide the locking button forward to unlatch the battery compartment. Open the battery compartment cover and insert the batteries true to side. Press the battery cover back down until the lock engages.

The battery symbol {**B, 9**} lights up when the battery voltage is too low. Replace the battery as soon as possible.

- Insert the batteries true to side
- Only use Alkaline batteries
- Remove the batteries if the instrument will not be used for a long period of time (to prevent corrosion)

Operation

Keypad and control elements

Refer to drawing {**B** }:

1 **LASER ON/OFF key**
2 **PULSE/POWERSAVE MODE key**
3 **Lock switch**

Display

Refer to drawing {**B**}

4 Laser crosshairs
5 Laser line horizontal
6 Laser line vertical
7 Lock ON
8 Pulse/Powersave mode ON
9 Battery voltage too low

Switching on/off

ON: Briefly press the **ON** - key {**B**, **1**}.

OFF: Press and hold down the **OFF**- key {**B**, **1**}.

Laser functions

Pressing the **ON**-key {**B**, **1**} activates the following laser functions:

Pressing the ON - key {B, 1}	activates
1 x	laser crosshairs (horizontal and vertical laser line)
2 x	horizontal laser line
3 x	vertical laser line

By pressing the **ON**-key {**B**, **1**} again, the previous function status is repeated.

Self leveling and Lock-functions

The instrument automatically levels itself within the specified grade range (Refer to "Technical data") .

Press the Lock switch {**B, 3**} in order to transport and tilt the instrument beyond the self-leveling range. When locked, the pendulum is fixed and the self-leveling function is deactivated.

Pulse/Power mode

The instrument is equipped with a Power mode. Switching on the instrument activates the Power mode and the laser lines are bright and highly visible.

If the high visibility of the laser lines is not required and if in addition energy should be saved, then pressing the Pulse key {**B, 2**} activates the Pulse mode.

To be able to detect the laser lines over long distances (› 20 m) or in unfavorable lighting conditions, a laser detector can be used. In Pulse mode, the laser beam is also recognized over large distances by the detector.

(Laser detector refer to accessories)

Applications

Examples of applications can be found on the outside of the back cover of this User Manual.

Checking the accuracy of the Makita SK102

Check the accuracy of your Makita SK102 regularly and particularly before important leveling jobs.

Checking the accuracy of the leveling

Refer to drawing {**J** + **K**}.

Set the instrument on a stand halfway between two walls (A+B) that are approx. 5 m apart.

Set the Lock switch {**B, 3**} to the "Unlocked" ( ) position.

Point the instrument to wall A and switch the instrument on with the **Laser ON** {**B, 1**} key . Activate the laser crosshairs with the **Laser ON** {**B, 1**} key and mark the point of intersection of the laser crosshairs on the wall A (-› A1).

Rotate the instrument by 180° and mark the point of intersection of the laser crosshairs on wall B (-› B1).

Then place the instrument at the same elevation as close as possible to wall A and again mark the point of intersection of the laser crosshairs on wall A (-› A2). Rotate the instrument by 180° again and mark the point of intersection of the laser crosshairs on wall B (-› B1). Measure the distances of the marked points A1-A2 and B1-B2. Calculate the difference of the two measurements. If the difference does not exceed 2 mm, then the Makita SK102 is within the range of tolerance.

| (A1 - A2) - (B1 - B2) | ≤ 2 mm

Checking the accuracy of the horizontal line

Refer to drawing {**L**}.

Place the Lock switch {**B, 3**} in the "Unlocked" ( ) position.

Position the instrument approx. 5 m away from the wall. Point the instrument at the wall and switch the instrument on with the **Laser ON** {**B, 1**} key . Activate both laser lines with the **Laser ON** {**B, 1**} key and mark the point of intersection of the laser crosshairs on the wall.

Swivel the instrument to the right and then to the left. Observe the vertical deviation of the horizontal line from the marking. If the deviation does not exceed 3 mm, then the Makita SK102 is within the range of tolerance.

Checking the accuracy of the vertical line:

Refer to drawing {**M**}.

Place the Lock switch {**B, 3**} in the "Unlocked" ( ) position.

As reference, use a plumb bob and mount it as close as possible to an approx. 3 m high wall.

Position the instrument at a distance of approx. 1.5 m from the wall at an elevation of approx. 1.5 m. Point the instrument at the wall and switch the instrument on with the **Laser ON** {**B, 1**} key . Activate the vertical laser line with the **laser ON** {**B, 1**} key. Swivel the instrument until the vertical laser line is slightly above the ground on the plumb-bob. Now determine the maximum deviation of the laser line to the plumb bob over the entire length of the line.

If the deviation does not exceed 2 mm, then the Makita SK102 is within the range of tolerance.

☞ Should your Makita SK102 be outside of the specified tolerance, please contact an authorized dealership.

Display notices

Falling below or exceeding the permissible temperature range:

The laser switches off and the symbols (–) and (+) start to flash.

Outside of the self-leveling range:

The laser switches off and the symbol of the function used starts to flash.

Pendulum locked:

The laser beam is not levelled and the Lock symbol {**B, 7**} lights up.

Care and operating notices

Do not immerse the instrument in water. Wipe off dirt with a damp soft cloth. Do not use aggressive cleaning agents or solutions. Treat the optical surfaces with the same care that you would apply to eyeglasses or a camera.

Severe vibrations or dropping the instrument may damage it. Before starting it up, check the instrument for possible damage. Regularly check the leveling accuracy of your instrument.

Transport

To safely transport the instrument, set the Lock switch {**B, 3**} to "Locked" (🔒).

Technical data

Range	min. 30 m with detector
Levelling accuracy	± 3 mm @ 10m
Inclination range	4 ° ± 0.5
Horizontal accuracy	± 1 mm @ 5m
Vertical accuracy	± 0.75 mm @ 3m line length
Laser type	635 nm, laser class II
Battery type	AA, 3 x 1.5 V
Water and dust protected	IP 54, dust-protected, spray water protected
Operating temperature	-10 °C to 40 °C
Storage temperature	-25 °C to 70 °C
Dimensions (L x W x H)	102 x 75 x 102 mm
Weight (with batteries)	475 g
Tripod thread	1/4"

All rights reserved for changes (on drawings, descriptions and technical data).

Safety instructions

EN

The person responsible for the instrument must ensure that all users understand these directions and adhere to them.

Symbols used

The symbols used have the following meanings

WARNING:
Indicates a potentially hazardous situation or an unintended use which, if not avoided, will result in death or serious injury.

CAUTION:
Indicates a potentially hazardous situation or an unintended use which,if not avoided, may result in minor injury and/or appreciable material, financial and enviromental damage.

Important paragraphs which must be adhered to in practice as they enabled the product to be used in a technically correct and efficient manner.

Permitted use

- Projecting a vertical laser line
- Projecting a horizontal laser line
- Projecting a vertical and a horizontal laser line simultaneously (laser crosshairs)

Prohibited use

- Using the product without instruction
- Using outside the stated limits
- Deactivation of safety systems and removal of explanatory and hazard labels
- Opening of the equipment by using tools (screwdrivers, etc.), as far as not specifically permitted for certain cases
- Carrying out modification or conversion of the product
- Deliberate dazzling of third parties; also in the dark
- Inadequate safeguards at the surveying site.

Limits of use

☞ Refer to section "Technical data".

The Makita SK102 is designed for use in areas permanently habitable by humans, do not use the product in explosion hazardous areas or in aggressive environments.

Responsibilities

Responsibilities of the manufacturer of the original equipment Makita Corporation Anjo, Aichi 446-8502, Japan:

Makita is responsible for supplying the product, including the User Manual and original accessories, in a completely safe condition.

Responsibilities of the manufacturer of non-Makita accessories:

The manufacturers of non-Makita accessories for the Makita SK102 are responsible for developing, implementing and communicating safety concepts for their products. They are also responsible for the effectiveness of these safety concepts in combination with the Makita equipment.

Responsibilities of the person in charge of the instrument:

⚠ **WARNING**

The person responsible for the instrument must ensure that the equipment is used in accordance with the instructions. This person is also accountable for the deployment of personnel and for their training and for the safety of the equipment when in use.The person in charge of the product has the following duties:

- To understand the safety instructions on the product and the instructions in the user manual.
- To be familiar with local safety regulations relating to accident prevention.
- To inform Makita immediately if the equipment becomes unsafe.

Hazards in use

⚠ **CAUTION:**

Watch out for erroneous distance measurements if the instrument is defective or if it has been dropped or has been misused or modified.

Carry out periodic test measurements. Particularly after the instrument has been subject to abnormal use, and before, during and after important measurements.
Refer to section "Checking the accuracy of the Makita SK102".

WARNING:
Flat batteries must not be disposed of with household waste.Care for the environment and take them to the collection points provided in accordance with national or local regulations.

The product must not be disposed of with the household waste.
Dispose of the product appropriately in accordance with the national regulations in force in your country.
Always prevent access to the product by unauthorized personnel.
Adhere to the national and country specific regulations.

All right reserved for changes (drawings, descriptions and technical specifications).

Electromagnetic Compatibility (EMC)

WARNING:
The Makita SK102 conforms to the most stringent requirements of the relevant standards and regulations. Yet, the possibility of it causing interference in other devices cannot be totally excluded.

FCC statement (applic. in U.S.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

WARNING:
Changes or modifications not expressly approved by Makita for compliance could void the user's authority to operate the equipment.

Laser classification

The Makita SK102 produces a visible laser beam which emerges from the front of the instrument.
It is a Class 2 laser product in accordance with:

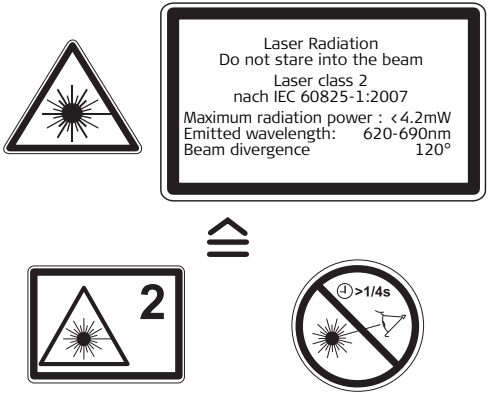
- IEC60825-1 : 2007 "Radiation safety of laser products"

Laser Class 2/ II products:
Do not stare into the laser beam or direct it towards other people unneccesarily. Eye protection is normally afforded by aversion responses including the blink reflex.

WARNING:
Looking directly into the beam with optical aids (e.g. binoculars, telescopes) can be hazardous.

CAUTION:
Looking into the laser beam may be hazardous to the eyes.

Labelling



Position of the product label see last page!